CONTENTS

Mass spectrometry and ion physics. A collection of invited papers dedicated to Professor John H. Beynon on the occasion of his 65th birthday and in honour of his seminal contributions to mass spectrometry.

John H. Beynon ix
Evolution of the unified scale of atomic mass, $^{12}C = 12$ u
H.E. Duckworth (Winnipeg, Man., Canada) and A.O Nier (Minneapolis, MN, U.S.A.) 1
Simultaneous detection of large mass spectra using unequally spaced multichannel plates in double exposure
A.J.H. Boerboom (Amsterdam, The Netherlands) and H.L.C. Meuzelaar (Salt Lake City, UT, U.S.A.) 21
Mass shifts induced by negative frequency peaks in linearly polarized Fourier transform ion cyclotron resonance signals
M. Wang and A.G. Marshall (Columbus, OH, U.S.A.) 31
A mass spectrograph for the analysis of collisionally activated molecular fragments
H. Matsuda and H. Wollnik (Giessen, F.R.G.) 53
A hybrid tandem supersonic beam mass spectrometer for the study of collision-induced dissociation of ions in the energy range < 1 to 3000 eV
A.K. Shukla, S.G. Anderson, S.L. Howard, K.W. Sohlberg and J.H. Futrell (Newark, DE, U.S.A.) 61
Enhanced mass resolution without decrease of beam intensity in a four sector mass spectrometer
T. Matsuo (Osaka, Japan), M. Ishihara (Akishima, Japan), S.A. Martin and K. Biemann (Cambridge, MA, U.S.A.) 83
An improved tandem double-focusing mass spectrometer for neutralization–reionization and collisional activation studies
R. Feng, C. Wesdemiotis, M.A. Baldwin and F.W. McLafferty (Ithaca, NY, U.S.A.) 95
A new ion source for the study of angle-resolved mass spectra
C. Moore, R.S. Mason, K.R. Jennings (Coventry, Gt. Britain) and S. Evans (Manchester, Gt. Britain) 109
Mass spectrometry of metastable ions and stereochemistry of steroids
Z.V.I. Zaretskii (Rehovot, Israel), J.M. Curtis, D. Ghosh and A.G. Brenton (Swansea, Gt. Britain) 121
Collision-induced fragmentation of $(M + H)^+$ ions of peptides. Side chain specific sequence ions
R.S. Johnson, S.A. Martin and K. Biemann (Cambridge, MA, U.S.A.) 137
Matrix effects on the formation of beam-induced adduct ions during fast atom bombardment of *N*-alkylpyridinium salts
T. Keough (Cincinnati, OH, U.S.A.) 155
Mechanism of formation of FAB spectra
J. Sunner (Bozeman, MT, U.S.A.), A. Morales and P. Kebarle (Alberta, Ed., Canada) 169
Analysis of mixtures of hydrophilic peptides by continuous-flow fast atom bombardment mass spectrometry
R.M. Caprioli, W.T. Moore (Houston, TX, U.S.A.), G. Petrie and K. Wilson (Foster City, CA, U.S.A.) 187
Formation of a new C–C bond in a sulfonenamide upon SO_2 elimination induced by electron impact ionization
M.J.-F. Suter, R. Lauber, R. Steinauer and U.-P. Schlunegger (Berne, Switzerland) 201

Stabilization energy and positional effects in halogen-substituted alkyl ions
J.L. Holmes, F.P. Lossing and R.A. McFarlane (Ottawa, Ont., Canada) 209
Does $MeCO^-$ undergo 1,2-hydride ion transfer to yield $^-CH_2CHO$ in the gas-phase? The application of experiment and theory in concert
K.M. Downard, J.C. Sheldon and J.H. Bowie (Adelaide, S.A., Australia) 217
Low-energy, low-temperature mass spectra. Part 11. The spectra of the alkanoic acids
A. Maccoll (London, Gt. Britain) 227
A new example of internal oxidation of remote groups in organic nitroaromatic ions
A. Maquestiau, R. Flammang, M. Flammang-Barbieux, L.-Z. Chen (Mons, Belgium) and C. Wentrup (Brisbane, Qld., Australia) 235
Investigation of asymmetric gas-phase ion/molecule reactions by FT-ICR spectrometry
E.N. Nikolaev, G.T. Goginashvili, V.L. Tal'rose and R.G. Kostyanovsky (Moscow, U.S.S.R.) . 249
Dissociation of protonated 2,2,6-trimethylcyclohexanone and related compounds upon high and low energy collisional activation
J.S. Brodbelt-Lustig and R.G. Cooks (West Lafayette, IN, U.S.A.) 253
Plasma desorption mass spectra of the three-dimensionally non-molecular material $[Cd(SC_6H_4CH_3\text{-}4)_2]_\infty$. Formation of cadmium-containing cluster ions
A. Grey Craig, I. Kamensky (Uppsala, Sweden), R. Garbutt, I.G. Dance and P.J. Derrick (Kensington, N.S.W., Australia) 273
Pressure dependence of charge reversal processes
W. de Lange and N.M.M. Nibbering (Amsterdam, The Netherlands) 287
Fragmentation reactions of the singly and doubly charged molecular ions of dimethylanisoles
A.G. Harrison, H. Camilleri, A.W. McMahon (Toronto, Ont., Canada) and R.E. March (Peterborough, Ont., Canada) 303
The vinyl dication ($CH_2CH^{\cdot 2+}$): classical or bridged?
M.W. Wong and L. Radom (Canberra, A.C.T., Australia) 319
A study of doubly charged ions in aluminum and iron acetylacetonates
T. Ast (Belgrade, Yugoslavia), B. Kralj, V. Kramer and D. Žigon (Ljubljana, Yugoslavia) 329
Double ionization energies of the chlorofluoromethanes CF_3Cl, CF_2Cl_2 and $CFCl_3$ determined using double-charge-transfer spectroscopy
W.J. Griffiths and F.M. Harris (Swansea, Gt. Britain) 341
The CS_2 dication
S. Mazumdar, V.R. Marathe, S.V.K. Kumar and D. Mathur (Bombay, India) 351
The dissociation dynamics of energy selected *o*-nitrotoluene ions
J.-D. Shao and T. Baer (Chapel Hill, NC, U.S.A.) 357
Translational energy spectroscopy of beams of $C^+(^2P_u)$ and $C^+(^4P_g)$ ions
M. Rincon, N.J. Kirchner and M.T. Bowers (Santa Barbara, CA, U.S.A.) 369
Photodissociation spectroscopy of several $C_5H_6^+$ isomeric ions
B. Asamoto and R.C. Dunbar (Cleveland, OH, U.S.A.) 387
Observation of rotational predissociation in $^{20}NeH^+$, $^{22}NeH^+$, $^{20}NeD^+$, $^{40}ArH^+$ and D_2^+ formed from various precursors
A.G. Brenton, M. Hamdan (Swansea, Gt. Britain), M. Guilhaus (Kensington, N.S.W., Australia), P.G. Fournier (Orsay, France) and R.K. Boyd (Halifax, NS, Canada) 401

Author Index 425

Subject Index 427